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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/632,108

08/01/2003

Tsuyoshi Yuki

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EXAMINER

GOLOBOY, JAMES C

ART UNIT

PAPER NUMBER

1714

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/632,108

Applicant(s)

YUKI ET AL.

Examiner

James Goloboy

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,7-12 and 14-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-12 and 14-23 is/are rejected.
- 7) ☐ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Please note the new examiner of record.
2. All outstanding rejections have been overcome by applicant's amendments of 2/23/07. New grounds of rejection necessitated by the amendments are set forth below.

### ***Claim Objections***

3. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 5 requires the branched alkyl R group of claim 1 to contain 20-24 carbon atoms. However, amended claim 1 already contains the same requirement.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-5, 7-12, and 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuki (U.S. Pat. No. 6,746,993, "Yuki '993").

Yuki '993 is a continuation-in-part of application 10/114,283, which was published as PG Pub No. 2003/0036488 ("Yuki '488"). Subject matter in Yuki '993 which finds support in Yuki '488 is therefore accorded the earlier date of April 3, 2002. In Table 1 of Yuki '993, polymers made from a mixture comprising

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various methacrylate monomers are disclosed:

TABLE 1

Example	Monomers		Dm	ADVN	Toluene	Polymer
	No.	Kind	pbw	pbw	pbw	No.
1	DTM/MM/HM/DMAEM	32/34/30/2	0.9	0.5	25	A-1
2	DDHM/MM/DDM/HM	20/34/32/12	0.9	0.5	25	A-2
3	DTE <sub>1</sub> M/MM/DDM/HM	20/32/36/10	0.9	0.5	25	A-3
4	DTM/MM/HM	30/32/32	0.9	0.5	25	A-4
5	DDHM/MM/DDM/HM	20/32/30/12	0.9	0.5	25	A-5
6	DTM/MM/DDM	20/30/50	0.9	0.5	25	A-6
7	DTM/DDHM/MM/DDM/DEAEM	30/10/35/23/2	0.9	0.5	25	A-7
8	DTM/MM/HM	30/35/35	0.9	0.5	25	A-8
9	MM/DDM/HM	20/70/10	0.9	0.5	25	A-9
10	OM/DDM	20/80	0.3	0.4	25	B-1
11	EHM/DDM/DMAEM	48/50/2	0.9	0.5	25	B-2
12	MM/DDM	55/45	0.9	0.5	25	B-3
13	DSM/MM/HM	40/30/30	0.9	0.5	25	B-4
14	MA/OX <sub>2</sub> , M/OX <sub>3</sub> , M/HM/OM	30/25/25/14/6	1.0	0.47	17.6	A-10
15	MA/DDM/TM/HM/OM	30/35/15/14/6	1.0	0.47	17.6	A-11
16	MA/DDM/TM/HM/OM/DSM	25/40/20/7/3/2	1.0	0.47	17.6	A-12

Tables 1-2 of Yuki '488 disclose similar polymers:

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TABLE 1

	Monomer	T <sub>g</sub> (° C.) of homopolymer
a1-1	2-decyl-tetradecyl methacrylate	-30
a1-2	2-dodecyl-hexadecyl methacrylate	-14
a1-3	2-decyl-tetradecyloxyethyl methacrylate	-25
a3-1	2-ethylhexyl methacrylate	<-40 (*1)
a5-1	n-dodecyl methacrylate	45

(\*1) less than -40° C.

TABLE 2

		Copoly- mer	Monomer											D	AD
			name	a1-1	a1-2	a1-3	a3-1	a5-1	a2-1	a4-1	a4-2	a3-2	d-1	d-2	M
Example	1	A-1	32					36	30			2		0.9	0.5
	2	A-2		20				35	12		32			0.9	0.5
	3	A-3			20			32	10		38			0.9	0.5
	4	A-4	30					38	32					0.9	0.5
	5	A-5		20				38	12		30			0.9	0.5
	6	A-6	20					30			50			0.9	0.5
	7	A-7	30	10				35			23		2	0.9	0.5
	8	A-8	30					35	35					0.3	0.5
	9	A-9						20	10		70			0.9	0.5
	51	B-1								20	80			0.3	0.4
C. Example	1	X-1				48					50	2		0.9	0.5
	2	X-2						55			45			0.9	0.5
	3	X-3					40	30	30					0.9	0.5

a2-1: methyl methacrylate

a4-1: n-hexadecyl methacrylate

a4-2: n-octadecyl methacrylate

a3-2: n-dodecyl methacrylate

d-1: N,N-dimethyl aminoethyl methacrylate

d-2: N,N-diethyl amino ethyl methacrylate

In fact, polymers A-1 through A-9, and B-1 of Yuki '993 and Yuki '488 are identical. For example, polymer A-1 of both references is formed from a monomer mixture comprising 32% by weight of 2-decyl-tetradecyl methacrylate (DTM), 36% by weight of methyl methacrylate (MM), 30% by weight of n-hexadecyl methacrylate (HM), and 2% by weight of N,N-dimethyl aminoethylmethacrylate (DMAEM).

Yuki '993 teaches in column 7 lines 21-65 that the monomer mixture may further comprise an unsaturated monomer containing a hydroxyl or carboxyl group, which is also taught in paragraphs 76-91 of Yuki '488.

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Yuki '993 teaches in column 4 lines 14-17 and column 8 lines 39-40 that the composition can further contain 10-60% by weight of a C<sub>1-4</sub> alkyl (meth)acrylate, which is mirrored in paragraphs 40 and 95 of Yuki '488. Examples 17-29 of Yuki '993 (Columns 17-18 and Table 3-4) disclose concentrates and lubricating compositions of the copolymer, which are supported by paragraphs 173-178 and Table 3-4 of Yuki '488. In column 13 lines 10-15 of Yuki '993, supported by paragraph 126 of Yuki '488, the uses of lubricating compositions recited in claim 21 are disclosed.

The above subject matter is therefore properly accorded a date of April 3, 2002, and qualifies as prior art.

Example 8 (Polymer A-8) of Yuki '993 is formed from a monomer mixture comprising 30% by weight of DTM (24 carbons), meeting the limitations of monomer (a) of claims 1, 5, 8, and 15, and 35% by weight of HM (16 carbons), meeting the limitations of monomer (b) of claims 1 and 15. The difference between polymer A-8 and the polymer of claim 1 is that copolymer A-8 does not contain an unsaturated monomer having a hydroxyl and/or carboxyl group.

As discussed above, Yuki '993 teaches in column 7 lines 21-65 that the monomer mixture may further comprise an unsaturated monomer containing a hydroxyl or carboxyl group, as recited in claims 1(c) and 9, and recited specific monomers meeting the limitations of claims 10-12 and 14. In column 9 lines 31-32, Yuki '993 teaches that this monomer is used in an amount of 0-20%, particularly 0.1-10%, overlapping the range recited in claim 1(c), and matching the 10% endpoint of claim 15. See MPEP 2144.05(I): "In the case where the

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claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In light of the above, claims 1, 5, 8-12, and 14-15 are rendered obvious by Yuki '993.

Additionally, the use of DTM meets the limitations of claims 2-4 where p is 1, R' is a straight-chain alkyl group containing 12 carbon atoms, and R'' is a straight-chain alkyl group containing 10 carbon atoms.

Yuki '993 teaches in column 4 lines 14-17 and column 8 lines 39-40 that the composition can further contain 10-60% by weight of a C<sub>1-4</sub> alkyl (meth)acrylate, where the 10% endpoint matches the endpoint recited in claim 16, and overlaps the range of up to 15% recited in claim 7. Examples 17-29 of Yuki '993 (Columns 17-18 and Table 3-4) disclose concentrates and lubricating compositions of the copolymer, comprising 24 and 17% by weight respectively of the copolymer, and where the base oil has a kinematic viscosity of 3 mm<sup>2</sup>/s and a viscosity index of 117, meeting the limitations of claims 17-20. In column 13 lines 10-15 of Yuki '993, the uses of the lubricating compositions recited in claim 21 are disclosed.

While Yuki '993 does not explicitly disclose a copolymer having the solubility parameters recited in claims 22-23, it is the examiner's position that as all the structural features of the copolymer are rendered obvious, the solubility parameters would have been inherent.

### ***Response to Arguments***

As a prima facie case of obviousness has been set forth in paragraph 4 above, it is appropriate to consider the Rule 132 declarations filed by applicant dated 8/31/06 and 12/6/06. The 8/31/06 declaration compares compositions comprising a copolymer prepared from a monomer mixture comprising an unsaturated monomer containing a least one of a hydroxyl or carboxyl group with compositions that do not contain such a monomer, and the 12/6/06 declaration compares compositions comprising a copolymer prepared from a monomer mixture comprising 4% by weight of the unsaturated monomer described above with copolymers prepared from mixtures comprising 6% and 25% by weight of the unsaturated monomer.

The data presented in these declarations is incommensurate with the scope of the claims. Specifically, the only unsaturated monomers used in the compositions that demonstrate alleged superior performance are hydroxyethyl methacrylate and methacrylic acid, while claim 1 recites *any* unsaturated monomer containing at least one hydroxyl or carboxyl group. The dependent claims, while narrower, still include other monomers that are not present in the compositions examined in the declarations. Additionally, claim 16 allows for the monomer mixture to comprise up to 10% by weight of a C<sub>1-4</sub> alkyl (meth)acrylate, such as methyl methacrylate, but in the declaration of 8/31/06 such a monomer is only present in the compositions that exhibit alleged inferior performance.

### ***Conclusion***



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5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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